

PATENT ABSTRACTS OF JAPAN

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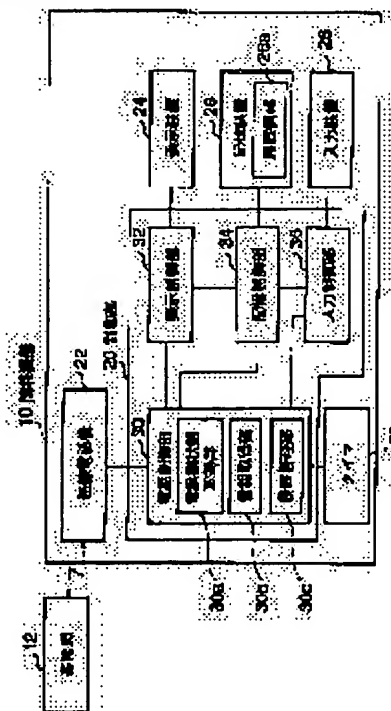
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(54) INFORMATION DEVICE WITH RADIO TELEPHONE SET, TELEPHONE SET CONTROL METHOD AND RECORDING MEDIUM STORING TELEPHONE SET CONTROL PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To enable storage and referencing of information relating to a call at each time (telephone number of a called party, date and time of call, duration of call, call charge, and reason for of call interruption or the like) as history information.

SOLUTION: The information device is provided with a telephone state acquisition section 30a that acquires a state of a radio telephone set 22 making communication with a base station 12, an information acquisition section 30b that acquires information relating to a call by the telephone set 22 in a prescribed state that is acquired by the telephone state acquisition section 30a, a storage device 26 with a large capacity, a display device 24, and a history management section 30c that stores history information 26a acquired by the telephone state acquisition section 30a and relating to a speech to the storage device 26 and allows the display device 24 to display the stored history information 26a.



LEGAL STATUS

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CLAIMS

[Claim(s)]

[Claim 1] In the information machines and equipment which have the radiotelephone which communicates by wireless between base stations A telephone condition acquisition means to acquire the condition of said radiotelephone which communicates with said base station, An information acquisition means to acquire the information about the call by said radiotelephone in the predetermined condition acquired by said telephone condition acquisition means, Information machines and equipment which have the radiotelephone characterized by providing the hysteresis management tool on which mass storage, a display, and the hysteresis information memorized while storing in said storage the hysteresis information about the call acquired by said information acquisition means are displayed in said display.

[Claim 2] It is the telephone control approach of information machines and equipment of having the radiotelephone which communicates by wireless between base stations. While acquiring the condition of said radiotelephone which communicates with said base station, acquiring the information about the call by said radiotelephone in this predetermined condition acquired and storing the hysteresis information about this acquired call in mass storage The telephone control approach of information machines and equipment of having the radiotelephone characterized by displaying the memorized hysteresis information in a display.

[Claim 3] It is the record medium with which the program which controls the information machines and equipment which have the radiotelephone which communicates by wireless between base stations was recorded. A telephone condition acquisition means to acquire the condition of said radiotelephone which communicates a computer with said base station, An information acquisition means to acquire the information about the call by said radiotelephone in the predetermined condition acquired by said telephone condition acquisition means, The record medium with which the telephone control program for making it function on the hysteresis management tool on which the memorized hysteresis information is displayed in a display while storing in mass storage the hysteresis information about the call acquired by said information acquisition means was recorded and in which computer reading is possible.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the record medium with which the information machines and equipment and the telephone control approach of having the radiotelephone which communicates by wireless between base stations, and the telephone control program were recorded.

[0002]

[Description of the Prior Art] Generally, in a radiotelephone, a phase hand's telephone number, the time which talked over the telephone are memorizable by performing a voice message by the communication link with a base station. For example, when there is arrival of the mail, time with a partner's telephone number and arrival is matched, it was decided beforehand and number-of-cases part (for example, ten affairs) preservation is carried out. Number-of-cases part (for example, ten affairs) preservation is carried out, and when [which performs redial dispatch] similarly the time which sent is matched with a partner's hand telephone number when sending, and decided beforehand, it can use.

[0003] Moreover, in a radiotelephone, duration of a call and phonecall charges can be saved. A part to have required for the last (this time) message and a part to have integrated from the time of reset to the present are saved, and it can be made to display about duration of a call or phonecall charges according to directions of a display check of duration of a call or duration of a call.

[0004] By the way, recently, the information machines and equipment which have a radiotelephone, and the so-called PDA (personaldigital assistant) are used increasingly widely. Also in PDA which has a radiotelephone, the information about the message of the telephone number of message time and a message partner, duration of a call, phonecall charges, etc. can be saved like the radiotelephone mentioned above.

[0005]

[Problem(s) to be Solved by the Invention] Thus, the information about a message was able to be saved in the information machines and equipment (PDA) which have the conventional radiotelephone or a radiotelephone. However, as for preservation of the information about the message in the former, record was separately performed by dispatch, arrival, duration of a call, and phonecall charges, respectively. Therefore, when the recorded information was referred to, it had to be made to display separately, respectively.

[0006] Moreover, since mass storage is fundamentally carried neither by the radiotelephone nor PDA also about the amount of information recorded For example, a part to have been able to record only ten affairs about dispatch and arrival, respectively, to be automatically deleted by the part beyond this number of cases, and to have required for the last message about duration of a call and phonecall charges, Only a part to have integrated by the present is only recorded and it was not able to record about each of the past message.

[0007] This invention was made in consideration of the above situations, and aims at offering the record medium with which the information machines and equipment and the telephone control approach of having the radiotelephone which can memorize the information (a message partner's telephone number, message time, duration of a call, phonecall charges, disconnect reason of a message, etc.) about the message for every message as hysteresis information, and the telephone control program were recorded.

[0008]

[Means for Solving the Problem] In the information machines and equipment which have the radiotelephone with which this invention communicates by wireless between base stations A telephone condition acquisition means to acquire the condition of said radiotelephone which communicates with said base station, An information acquisition means to acquire the information about the message by said radiotelephone in the predetermined condition acquired by said telephone condition acquisition means, It is characterized by providing the hysteresis management tool on which mass storage, a display, and the hysteresis information memorized while storing in said storage the hysteresis information about the message acquired by said information acquisition means are displayed in said display.

[0009] According to such a configuration, the information about the message performed through a radiotelephone is acquired for every predetermined condition of a radiotelephone, and is memorized by mass storage. Since information is memorized by mass storage, it can be made to display as hysteresis of the information about a communication link.

[0010]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing.

Drawing 1 is the block diagram showing the system configuration of the information machines and equipment 10 which have a radiotelephone concerning this operation gestalt. The information machines and equipment 10 shown in drawing 1 read the

program recorded on record media, such as CD-ROM, DVD, and a magnetic disk, and are realized by the computer by which actuation is controlled by this program. Information machines and equipment 10 have the radiotelephone 22, and can perform the message by wireless, for example, a voice message, FAX, data communication, etc. between base stations 12.

[0011] As shown in drawing 1, the information machines and equipment 10 in this operation gestalt are constituted including a control section 20, a radiotelephone 22, a display 24, storage 26, the input unit 28, and the timer 29.

[0012] A control section 20 controls actuation of information machines and equipment 10, is a function part realized by performing each control program by CPU, and contains the telephone control section 30, a display and control section 32, the storage control section 34, and the input-control section 36.

[0013] The telephone control section 30 talks over the telephone by controlling a radiotelephone 22 (a voice message, FAX, data communication), and telephone condition acquisition section 30a, information acquisition section 30b, and hysteresis Management Department 30c are prepared as a function for memorizing the information about a message as hysteresis information in the information machines and equipment of this operation gestalt.

[0014] Telephone condition acquisition section 30a is a function which acquires the conditions (finishing [cutting waiting and during a dial and connection] etc.) of the radiotelephone 22 which communicates with a base station 12. Information acquisition section 30b It is the function which acquires the information about the message by the radiotelephone 22 in the predetermined condition acquired by telephone condition acquisition section 30a. Hysteresis Management Department 30c While making the hysteresis information about the message acquired by information acquisition section 30b memorize in storage 26 by the storage control section 34, it is the function on which this memorized hysteresis information is displayed in a display 24 by the display and control section 32.

[0015] A display and control section 32 manages the display control to a display 24, and indicates by list the hysteresis information 26a which the display accompanying the various processings performed in information machines and equipment was performed, and also was memorized by storage 26 under control of the telephone control section 30 (hysteresis Management Department 30c).

[0016] The storage control section 34 manages the control to storage 26, it performs call/preservation, and also sets to hysteresis information 26a information acquired by information acquisition section 30b under control of the telephone control section 30 (hysteresis Management Department 30c), and is stored in storage 26. [a program, data, etc. which are used in case various processings performed in information machines and equipment are performed]

[0017] The input-control section 36 controls the input from an input unit 28, and performs the input of the phase hand telephone number at the time of talking over the telephone through the command to the various processings to information machines and equipment, or data or a radiotelephone 22 etc.

[0018] A radiotelephone 22 can communicate by wireless between base stations 12, and can acquire information, such as the information about a message, for example, the phase hand telephone number at the time of arrival of the mail, phonecall charges, and a disconnect reason of a message, from a base station 12 in a predetermined condition besides the data for a message (a voice message, FAX, data communication). The information about the message acquired by the radiotelephone 22 is acquired by the telephone control section 30 (information acquisition section 30b).

[0019] A display 24 is for displaying various kinds of information by the basis of control of a display and control section 32, for example, is constituted by LCD.

[0020] A store 26 is for memorizing the hysteresis (hysteresis information 26a) of the information about the message using various kinds of programs by the basis of control of the storage control section 34, or data 22, for example, a radiotelephone, etc., and is constituted by the hard disk drive unit with large capacity etc. Storage 26 does not need to prepare a special limit to the number of cases of the information memorized as hysteresis information 26a since it is large capacity etc.

[0021] An input device 28 is constituted by a keyboard, various carbon buttons and a mouse, the pointing device with a pen (tablet), etc., and it is operated in order to input a command, data, etc. to information machines and equipment.

[0022] The data of date time of day are generated, this data is read if needed, and a timer 29 is used when performing measurement of the communication link time amount at the time of talking over the telephone through a radiotelephone 22, registration of a message date, etc.

[0023] Next, it explains, referring to the flow chart shown in drawing 2 about the actuation in this operation gestalt. Drawing 2 (a) shows the flow chart at the time of performing dispatch from information machines and equipment 10, and shows the flow chart (1) which drawing 2 (b) shows the flow chart at the time of information machines and equipment 10 receiving, and shows the state transition of a radiotelephone 22 about each, and the flow chart (2) which shows the processing actuation by the telephone control section 30.

[0024] First, the procedure of preservation of the hysteresis information at the time of dispatch is explained, referring to the flow chart of drawing 2 (a). telephone condition acquisition section 30a -- a radiotelephone 22 -- being waiting (idle) -- if a dispatch partner's telephone number is directed and activation of dispatch is directed by operating a (step) A1 28, for example, an input unit, while acquiring the condition of being, it will be notified to the telephone control section 30 through the input-control section 36. In addition, a dispatch partner's telephone number may input digit string data by actuation to an input device 28, and may be chosen from the telephone numbers registered beforehand.

[0025] The telephone control section 30 makes the dial tone according to a dispatch partner's inputted telephone number send with a radiotelephone 22. A radiotelephone 22 connects a circuit with a base station 12 according to the directions from the telephone control section 30, and notifies the dial tone of a dispatch partner's telephone number (step A2).

[0026] If it detects that it is in the condition (under a dial) that the radiotelephone 22 has notified the dial tone by telephone

condition acquisition section 30a (step A3), information acquisition section 30b will acquire the class (dispatch) of the phase hand telephone number which notified the dial tone with the radiotelephone 22, and communication link (step B1).

[0027] A radiotelephone 22 performs connection with a partner, and a call as a partner through a base station 12 (step A4). If connection with a partner is made, a radiotelephone 22 will be in the condition under connection, and the demanded messages (a voice message, FAX, data communication, etc.) will be performed under control of the telephone control section 30 (step A5). In addition, a control section 30 acquires the time of day when connection with a partner was started from a timer 29, in order to find communication link time amount.

[0028] On the other hand, if it detects that a radiotelephone 22 connects by telephone condition acquisition section 30a, information acquisition section 30b will acquire the data of a message date with reference to a timer 29 (step B-2).

[0029] Moreover, in case the circuit between a base station 12 and a radiotelephone 22 is cut, a radiotelephone 22 acquires the information on phonenumber charges and a disconnect reason from a base station 12 (step A6).

[0030] If the condition, finishing [cutting of a radiotelephone 22], is detected by telephone condition acquisition section 30a, information acquisition section 30b will acquire the information on the phonenumber charges which the radiotelephone 22 acquired from the base station 12, and a disconnect reason. Moreover, information acquisition section 30b acquires the communication link time amount by end time until a circuit is cut from the time of day when connection with a partner was started (step B3).

[0031] Hysteresis Management Department 30c matches the telephone number of each information acquired by information acquisition section 30b in each condition of a radiotelephone 22, i.e., a date, and a phase hand, phonenumber charges, a communicative class, and the information on a disconnect reason, and is made to memorize them as hysteresis information 26a in storage 26 through the storage control section 34 (step B4).

[0032] Next, the procedure of preservation of the hysteresis information at the time of arrival of the mail is explained, referring to the flow chart of drawing 2 (b). telephone condition acquisition section 30a -- a radiotelephone 22 -- being waiting (idle) -- if it detects having received the call from (step C1) and a base station 12 in the condition of being (step C2), information acquisition section 30b will acquire the class (arrival of the mail) of the phase hand telephone number received by the radiotelephone 22, and communication link (step D1).

[0033] When it accepts by actuation to an input unit 28 and directions are inputted as opposed to reception of a call, the telephone control section 30 makes it connect with a partner to a radiotelephone 22 (step C3). A radiotelephone 22 will be in the condition under connection, and the demanded messages (a voice message, FAX, data communication, etc.) will be performed under control of the telephone control section 30 (step C4). In addition, a control section 30 acquires the time of day when connection with a partner was started from a timer 29, in order to find communication link time amount.

[0034] On the other hand, if it detects that a radiotelephone 22 connects by telephone condition acquisition section 30a, information acquisition section 30b will acquire the data of a message date with reference to a timer 29 (step D2).

[0035] Moreover, in case the circuit between a base station 12 and a radiotelephone 22 is cut, a radiotelephone 22 acquires the information on phonenumber charges and a disconnect reason from a base station 12.

[0036] If the condition, finishing [cutting of a radiotelephone 22], is detected by telephone condition acquisition section 30a, information acquisition section 30b will acquire the information on the phonenumber charges which the radiotelephone 22 acquired from the base station 12, and a disconnect reason (step D3). Moreover, information acquisition section 30b acquires the communication link time amount by end time until a circuit is cut from the time of day when connection with a partner was started (step D3).

[0037] Hysteresis Management Department 30c matches the telephone number of each information acquired by information acquisition section 30b in each condition of a radiotelephone 22, i.e., a date, and a phase hand, phonenumber charges, a communicative class, and the information on a disconnect reason, and is made to memorize them as hysteresis information 26a in storage 26 through the storage control section 34 (step B4).

[0038] Thus, the telephone control section 30 can acquire various kinds of information about the message by the radiotelephone 22, and can make storage 26 carry out sequential storage as hysteresis information 26a in the predetermined condition of a radiotelephone 22.

[0039] Hysteresis information 26a memorized by storage 26 as mentioned above is displayed in a display 24 according to directions of a hysteresis information list display. That is, if the demand of the hysteresis information list display from an input unit 28 is inputted, hysteresis Management Department 30c will read hysteresis information 26a from storage 26 through the storage control section 34, and will indicate by list in a display 24 through a display and control section 32.

[0040] An example of a hysteresis information list display is shown in drawing 3. As shown in drawing 3, the information acquired in each condition of a radiotelephone 22 for every message matches with hysteresis information, and it is indicated by the list. Therefore, for every information, can call the information about a message, it cannot be displayed, and it can refer to easily, and can grasp easily also about a disconnect reason. Various kinds of reasons of the phase hand by whom the power source of the radiotelephone of the phase hand whose partner other than "normal cutting" shown in drawing 3 and "a phase hand number not being one of disconnect reasons" is in the communication link outside of the circle is turned off being a setup of arrival-of-the-mail refusal can be included.

[0041] Moreover, since hysteresis information 26a is accumulated in the mass storage 26 and it does not need to prepare a limit in the registration number of cases of the information about a message in fact, it can accumulate hysteresis information 26a containing many message number of cases. Moreover, it is also possible to use also in other information machines and equipment because hysteresis information 26a creates as a general data file.

[0042] In addition, hysteresis Management Department 30c can be displayed after editing an array like the order of the date, and a

phase hand's order of the telephone number to hysteresis information 26a memorized by storage 26 according to the directions from an input unit 28, or it can also extract and display only the information about the message applicable to the conditions of arbitration.

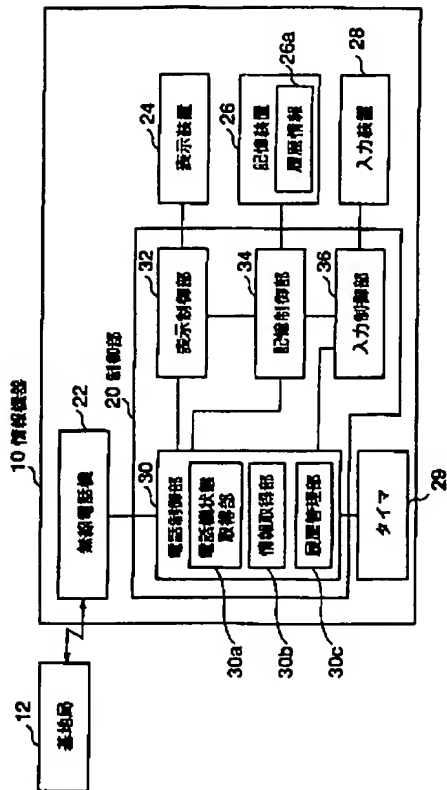
[0043] Moreover, as a program which a computer can be made to execute, the technique indicated in the operation gestalt mentioned above can be written in record media, such as magnetic disks (a floppy disk, hard disk, etc.), optical disks (CD-ROM, DVD, etc.), and semiconductor memory, and various equipments can be provided with it. Moreover, it is also possible to transmit by communication media and to provide for various equipments. The computer which realizes this equipment performs processing mentioned above by reading the program recorded on the record medium, or receiving a program through communication media, and controlling actuation by this program.

[0044]

[Effect of the Invention] As explained in full detail above, according to this invention, the condition of the radiotelephone which communicates with a base station is acquired. While acquiring the information about the message by the radiotelephone in this predetermined condition acquired and storing the hysteresis information about this acquired message in mass storage It becomes possible to prepare the function on which the memorized hysteresis information is displayed in a display, to memorize the information (a message partner's telephone number, message time, duration of a call, phonecall charges, disconnect reason of a message, etc.) about the message for every message as hysteresis information by Rumi, and to refer to.

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Drawing selection Representative drawing ▼



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PRIOR ART

[Description of the Prior Art] Generally, in a radiotelephone, a phase hand's telephone number, the time which talked over the telephone are memorizable by performing a voice message by the communication link with a base station. For example, when there is arrival of the mail, time with a partner's telephone number and arrival is matched, it was decided beforehand and number-of-cases part (for example, ten affairs) preservation is carried out. Number-of-cases part (for example, ten affairs) preservation is carried out, and when [which performs redial dispatch] similarly the time which sent is matched with a partner's hand telephone number when sending, and decided beforehand, it can use.

[0003] Moreover, in a radiotelephone, duration of a call and phonecall charges can be saved. A part to have required for the last (this time) message and a part to have integrated from the time of reset to the present are saved, and it can be made to display about duration of a call or phonecall charges according to directions of a display check of duration of a call or duration of a call.

[0004] By the way, recently, the information machines and equipment which have a radiotelephone, and the so-called PDA (personaldigital assistant) are used increasingly widely. Also in PDA which has a radiotelephone, the information about the message of the telephone number of message time and a message partner, duration of a call, phonecall charges, etc. can be saved like the radiotelephone mentioned above.

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TECHNICAL PROBLEM

=====

[Problem(s) to be Solved by the Invention] Thus, the information about a message was able to be saved in the information machines and equipment (PDA) which have the conventional radiotelephone or a radiotelephone. However, as for preservation of the information about the message in the former, record was separately performed by dispatch, arrival, duration of a call, and phonecall charges, respectively. Therefore, when the recorded information was referred to, it had to be made to display separately, respectively.

[0006] Moreover, since mass storage is fundamentally carried neither by the radiotelephone nor PDA also about the amount of information recorded. For example, a part to have been able to record only ten affairs about dispatch and arrival, respectively, to be automatically deleted by the part beyond this number of cases, and to have required for the last message about duration of a call and phonecall charges, Only a part to have integrated by the present is only recorded and it was not able to record about each of the past message.

[0007] This invention was made in consideration of the above situations, and aims at offering the record medium with which the information machines and equipment and the telephone control approach of having the radiotelephone which can memorize the information (a message partner's telephone number, message time, duration of a call, phonecall charges, disconnect reason of a message, etc.) about the message for every message as hysteresis information, and the telephone control program were recorded.

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DESCRIPTION OF DRAWINGS
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[Brief Description of the Drawings]

[Drawing 1] The block diagram showing the system configuration of the information machines and equipment 10 which have a radiotelephone concerning this operation gestalt.

[Drawing 2] The flow chart for explaining the actuation which memorizes the hysteresis information in this operation gestalt.

[Drawing 3] Drawing showing an example of a hysteresis information list display.

[Description of Notations]

- 10 -- Information machines and equipment
- 12 -- Base station
- 20 -- Control section
- 22 -- Radiotelephone
- 24 -- Display
- 26 -- Storage
- 26a -- Hysteresis information
- 28 -- Input unit
- 29 -- Timer
- 30 -- Telephone control section
- 30a -- Telephone condition acquisition section
- 30b -- Information acquisition section
- 30c -- Hysteresis Management Department
- 32 -- Display and control section
- 34 -- Storage control section
- 36 -- Input-control section

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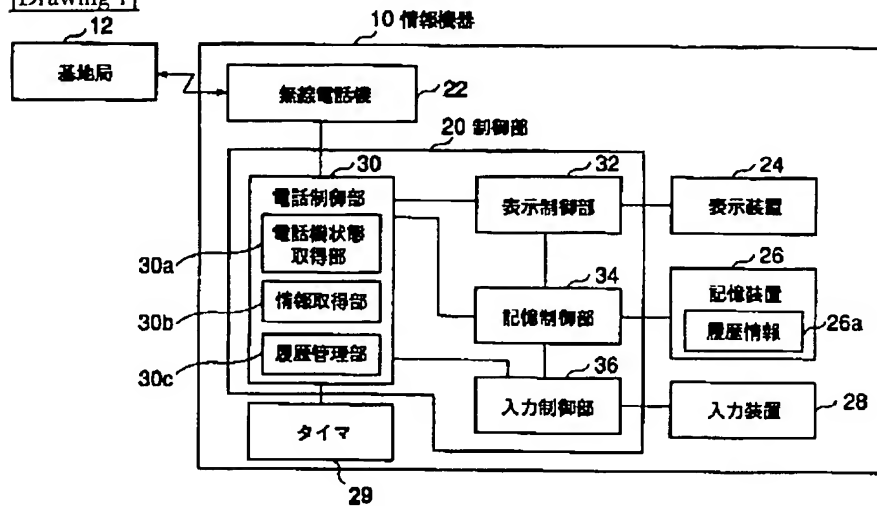
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DRAWINGS

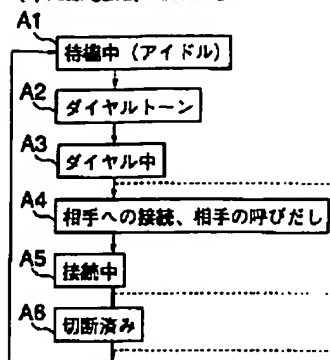
[Drawing 1]



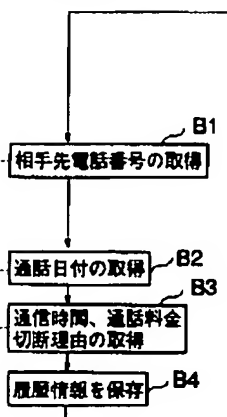
[Drawing 2]

(a) 発信の場合

(1) 無線電話機の状態遷移

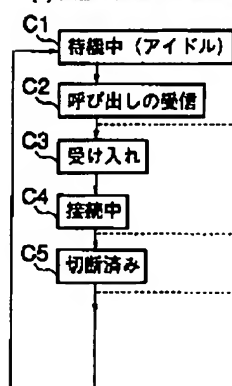


(2) 電話制御部

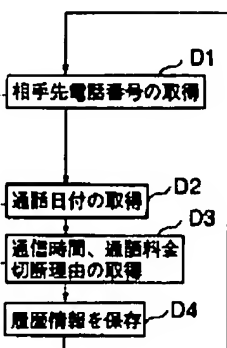


(b) 着信の場合

(1) 無線電話機の状態遷移



(2) 電話制御部



[Drawing 3]

日付	相手先の番号	通話時間	通話料金	通信の種類	切断理由
1999/10/1	123456789	0:00:10	30	発信	正常な切断
1999/10/1	987654321	0:01:10		着信	正常な切断
1999/10/2	567891234			発信	相手先番号がありません

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